

Calculating Pressure Drop – Practice Problem Answers

Practice Problem 1

A 6-inch main is being tapped for a service line. The pressure at the meter is 52 psi. The two-story house with 12-foot ceilings sits on a hill and has an upstairs bathroom. The meter is at an elevation of 266 feet, and the house sits at an elevation of 350 feet. What is the pressure delivered to the upstairs bathroom from the meter?

Difference in Elevation

$$266 \text{ ft} - (350 \text{ ft} + 12 \text{ ft})$$

$$(266 \text{ ft} - 362 \text{ ft}) = -96 \text{ ft}$$

Pressure Drop

$$-96 \times .433 = -41.57 \text{ psi}$$

Pressure Delivered to the Upstairs Bathroom

$$52 \text{ psi} - 41.57 \text{ psi}$$

$$10.43 \text{ psi}$$

Practice Problem 2

A 6-inch main is being tapped for a service line. The pressure at the meter is 47 psi. The house sits on a hill. The meter is at an elevation of 295 feet and the house sits at an elevation of 352 feet. What is the pressure delivered to the upstairs bathroom from the meter?

Difference in Elevation

$$295 \text{ ft} - 352 \text{ ft} = -57 \text{ ft}$$

Pressure Drop

$$-57 \times .433 = -24.68 \text{ psi}$$

Pressure Delivered to the House

$$47 \text{ psi} - 24.68 = 22.32$$